10. Volcano

Program Name: Volcano.java Input File: volcano.dat

You've been living on a remote rectangular island for the past 5 years now, and it has always worried you that there's a volcano nearby. You want to determine if you need to move your home to a different island, or if you are safe where you are.

A 2D grid filled with grass, trees, water, and a volcano represents your island. A T within this grid represents a tree, a W represents water, and the V represents the volcano. Your home is located at an S. Assume that in a single unit of time, you can move up, down, left, or right (but not diagonally) within the grid. However, you cannot jump in the water, or climb a tree. At the same time that you move, the volcano's lava spreads in all directions (up, down, left, and right, but not diagonally) from where it currently is, and lava moves at the same rate as you do -- one unit of distance in one unit of time. Lava may pass unhindered through trees, but cannot get past water. If your home can be reached by lava, then you must make it to the cave, C before the lava gets to you.

Determine if you will be able to reach safety if the volcano erupts one day, or if you need to move somewhere else.

Input

The first line of input contains an integer T, which represents the number of test cases. For each test case, there is a line containing two integers N and M, which represent the number of rows and columns in your 2D grid island. The next N lines each contains an M length string consisting of these characters:

T = Tree W = Water S = Home C = Cave V = Volcano . = Grass

Output

Output YES if you need to move your home to a better location, meaning that you can't make it to the cave safely should there be an eruption. Otherwise, if your home keeps you safe in its current location, output NO.

Example Input File

```
3
5 5
WWS.T
..T.C
.....
.W...
.VWW.
3 10
WWWCTTT...
WWW.TTT...
S...TTV...
1 6
VWC.TS
```

Example Output to Screen

```
NO
YES
NO
```